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Army Service Forces
Quartermaster Corps
CLIMATIC RESEARCH LABORATORY
Lawrence, Massachusetts

Monthly Report - 1 May 1945

1. The following reports were sent to the Office of The Quartermaster General for the approval of General Georges F. Doriot:

Report No. 169 - 16 April 1945

Stand, Heating, Cup, Canteen, Standard and Experimental Models
Utility and Efficiency under various Ambient Conditions
Five Tables and Eight Figures

Seven types of individual stoves for use with solid fuels and canteen cup or C Ration cans were tested in the Chemical Laboratory and in the Cold Room at temperatures as low as minus 20°F., with and without a wind. Included in the test were the following items:

<u>Type No.</u>	<u>Description</u>
2	Stand, Heating, Cup, Canteen
3	Stove, Esbit, German
4	Stove, Folding, Experimental
5	Stove, Experimental, C Ration, Expendable
6	Stove, Experimental, C Ration, Permanent
7	Stove, Experimental, C Ration, Preble
8	Stove, Experimental, C Ration, Improvised

The efficiencies of the Stove, Canteen Cup; Stand, Heating, Cup, Canteen, and Stove, Experimental, Folding, are consistently high. The last is most efficient generally and maintains its efficiency well under all circumstances and with all containers tested. On the other hand, the first two items are seriously affected by certain environmental conditions when used with hexamine fuel and cannot be conveniently used to heat C Ration.

The only stoves tested by this laboratory that are readily adjustable for use with the C Ration can, as well as with the canteen cup, are the experimental folding stove and the German Esbit stove. The Stand, Heating, Cup, Canteen and the Stove, Canteen Cup can be used only with the canteen cup, while the C Ration stoves are efficiently and conveniently used only with the C Ration can.

The efficiency of C Ration stoves, whether pre-fabricated or improvised, is lower than that of other stoves.

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The addition of a base to a stove of any type increases its adaptability to field situations, makes it more stable and increases its efficiency when used with certain types of fuel.

There are serious disadvantages to the use of any stove which must be prepared from empty C Ration cans in the field. Such items should be regarded as temporary expedients only.

Report No. 179 - 24 April 1945

Clocks, Alarm

Performance in Environmental Extremes

Five Tables and Thirteen Figures

Two types of alarm clocks were tested for performance in the Constant Temperature Room at a temperature of 104°F., relative humidity of 100 percent, and in the Cold Room at progressively colder temperatures down to minus 40°F. A victory clock was compared with a pre-war type.

The victory type clock showed a great tendency to corrode in the tropical phase, and after a few days of exposure stopped and could not be started. The pre-war type clock, on the other hand, operated fairly satisfactorily throughout the experimental period.

The pre-war type clock was the only item available for test in the cold phase. At temperatures below zero degrees Fahrenheit, progressively greater time losses occurred until eventually the clock ceased to run. This varied between minus 26°F. and minus 35°F. When the clock was running and exposed to minus 26°F. and progressively higher temperatures, it ran for increasingly longer periods of time until finally it operated continuously at a temperature between minus 6°F. and minus 17°F.

Report No. 177 - 30 April 1945

Bag, Sleeping, Wool

Lengthening of Slide Fastener

Utility of Standard versus Elongated Slide Fastener

Eleven Tables and Two Figures

There have been two criticisms made of the design of the wool sleeping bag. Firstly, escape from the bag is difficult in time of emergency, and secondly, the bag is so sized that it is impossible for a fully equipped combat soldier to obtain a comfortable night's rest while encased in it. In order to correct these deficiencies it has been proposed to increase the length of the slide fastener and increase the breadth of the bag.

The testing of modified items involved a study of escape time with slide fasteners of 33 inches (standard), 48 inches, and 63 inches, respectively, as well as a sizing study of bags that had a gore inserted in the bottom. This insert measured 6 inches in width at the shoulders and was tapered to the foot of the bag. All of the testing was done in the Cold Room

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at an ambient temperature of plus 20°F. under blackout conditions. A comparison was made between utility of the modified bags versus four blankets and a poncho.

It was concluded that a longer slide fastener has merit but the benefit derived does not warrant the change in the standard item. On the other hand, increasing the size of the bag seemed desirable.

2. The Wet Cold Field Trials at Fort Preble, Maine, under the supervision of Captain Clinton, Test Officer in Charge, have terminated, and reports on same are being written. In this task he is being assisted by the five senior test officers, three junior test officers, Mr. Ed Folk, Test Observer, and Professor Alan Treloar, Statistical Chief of the Trials. It is planned to complete the reports within six weeks.

3. In the Provisional Reports during the month, tests on the following items were discussed:

Jungle Uniform
Pads, Insulated, Sleeping
Shoepac, M-1944, Modified
Trousers, Field, Wool
Fuel, Ration, Heating, Japanese
Fuels, Solid, Self-Heating Cans
Trousers, Padded, Sateen
Glove, Working, Waterproof
Clothing, Protective; Hoods, Handgear, Jackets
and Trousers for Wet Cold Climate
Parka, Field, Pile, Modified Hood Construction

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